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Students' Satisfaction with Blended Learning in a Public College in Chengdu, China

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Abstract

Purpose: The study comprehensively explores the impact of five independent variables: teaching presence, system quality, information quality, perceived usefulness, and self-efficacy. The dependent variable is students' satisfaction. **Research design, data, and methodology:** The research utilized the Index of Item-Objective Congruence (IOC) to assess validity and employed Cronbach's Alpha in a pilot test with 40 participants to establish reliability. Subsequently, 80 valid responses from students at Chengdu Vocational and Technical College of Industry were subjected to multiple linear regression analysis. This analysis aimed to ascertain the significant relationships among the variables. Following this, a cohort of 30 students participated in a 14-week strategic plan. The quantitative data obtained before and after the strategic plan implementation were compared using a paired-sample t-test, providing a comprehensive evaluation of the plan's effectiveness. **Results:** In the multiple linear regression analysis, it was found that factors such as teaching presence, system quality, information quality, perceived usefulness, and self-efficacy significantly impacted students' satisfaction. Additionally, the paired-sample t-test results indicated a notable difference in students' satisfaction before and after the implementation of the strategic plan. **Conclusions:** This research is dedicated to identifying and implementing strategies that effectively meet students' specific needs and expectations in this region, thereby contributing to an improved educational experience.

Keywords : System Quality, Information Quality, Perceived Usefulness, Self-Efficacy, Blended Learning

JEL Classification Code: I23, J28, L2

1. Introduction

In the rapidly evolving landscape of global education,

Integrating blended learning methodologies has emerged as a pivotal innovation, particularly within specialized institutions like the Chengdu Vocational and Technical College of Industry (CDIVTC) in China. This study aims to explore the effectiveness of blended learning in enhancing student satisfaction, with a specific focus on the finance literacy course offered at CDIVTC. Blended learning, which amalgamates traditional classroom experiences with online educational resources, is especially relevant in the vocational and technical education sector, where practical skills and industry alignment are paramount.

Blended learning's evolution from a supplementary educational tool to a mainstay in modern pedagogy highlights its potential to reshape the educational experience. This approach is beneficial in vocational and technical institutions like CDIVTC, which is known for its focus on aligning educational practices with the latest industry standards. The college's commitment to technical excellence and practical skills development underscores the need for innovative teaching methodologies like blended learning.

The finance literacy course at CDIVTC, designed to equip students with essential financial skills and knowledge, presents an ideal context for examining blended learning's impact. The integration of online resources and interactive platforms could potentially transform the learning process, making complex financial concepts more accessible and engaging.

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This study assesses the implementation of blended learning in the finance literacy course at CDIVTC and its influence on student satisfaction. It addresses the challenges and opportunities unique to blended learning in a vocational and technical education setting. The primary objectives are to evaluate the current state of blended learning in the finance literacy course and to identify key factors contributing to student satisfaction in this environment.

The paper is organized as follows: Section 2 reviews the literature on blended learning, emphasizing on independent variables and dependent variables. Section 3 outlines the research methodology, describing the design, data collection, and analytical approaches employed in this study. Section 4 presents the research findings, offering a analysis of blended learning's impact on student satisfaction at CDIVTC. Finally, Section 5 discusses the implications of these findings for educational practice and policy, highlighting the potential of blended learning in vocational education and suggesting avenues for future research.

2. Literature Review

2.1 Students Satisfaction

Student Satisfaction (SS) reflects learners' perceived value of their educational experiences, particularly in blended learning scenarios. It acts as a key metric for evaluating learner attitudes and institutional performance (Cole et al., 2014; Wu et al., 2010). The integration of blended learning systems in education necessitates understanding the factors that motivate student engagement and enhance satisfaction. High levels of satisfaction correlate with improved academic outcomes, including better grades and a positive attitude towards course quality, instruction, and facilities (Wong & Chapman, 2023).

The shift towards online education has amplified the need to examine elements influencing satisfaction in e-learning. Factors like interactivity, teaching material quality, and course design significantly impact students' perceptions of e-learning systems' usefulness and overall satisfaction (Cole et al., 2014). Satisfaction is crucial to the effectiveness of online programs, influencing students' intentions to continue using blended learning platforms (Cheng, 2020). Studies by Wu et al. (2010) and others have identified variables such as self-performance, material features, interactions, and the educational environment as determinants of learning satisfaction in blended systems. Research indicates that instructional clarity and activity relevance significantly boost student motivation and performance, outweighing the mode of instruction's influence (Siddiqui et al., 2020). Furthermore, Mirabolghasemi et al. (2021) highlighted the importance of instructional and cognitive presence, information, and system quality in enhancing satisfaction in blended learning. The development of a strong community of inquiry within courses positively affects student satisfaction and retention, demonstrating the multifaceted role of student satisfaction in online educational contexts.

2.2 Teaching Presence

Teaching presence (TP), as defined within the Community of Inquiry (CoI) framework, is central to achieving meaningful educational outcomes in online learning environments. Introduced by Anderson et al. (2001), TP encompasses the design, facilitation, and direction of cognitive and social processes in education. It is characterized by two primary responsibilities: the design of educational experiences and facilitation, both of which significantly influence the instructor's role in digital learning (Garrison et al., 2000; Mirabolghasemi et al., 2021). This concept involves not just the planning and presentation of course materials but also the instructional guidance to realize specific learning goals (Tan, 2021).

TP is crucial in enhancing cognitive and social competencies through instructional management and direct instruction (Giannousi & Kioumourtzoglou, 2016). Its effectiveness is reflected in the positive correlation with perceived learning and student satisfaction, emphasizing the instructor's engagement with students and course materials (Akyol & Garrison, 2008; Martin et al., 2022). The role of TP extends to linking cognitive and social presence, with facilitators in online courses playing a pivotal role in this integration (Garrison et al., 2000). Mirabolghasemi et al. (2021) detail TP's functions as including feedback generation, course material annotation, and multimedia lecture delivery.

Research has shown that TP significantly impacts student satisfaction and learning, surpassing the effects of social interactions or individual cognitive efforts (Szeto, 2015). Garrison et al. (2000) further divide TP into instructional design and organization, discourse facilitation, and direct instruction. These components encompass course structure creation, student engagement, and leveraging instructor expertise for student knowledge construction (Caskurlu et al., 2020). In summary, TP in online learning is the faculty's ability to promote cognitive and social interactions, leading to impactful and valuable learning experiences. As a result, the following hypothesis is posited:

H1: Teaching presence has a significant impact to students ‘satisfaction in blended learning.

2.3 System Quality

System quality (SQ) in blended learning is essential for providing resources like accessibility, usability, and performance. Defined as a key measure of online learning

systems' effectiveness, SQ encompasses technical and design aspects of an information system, including availability, usability, efficiency, and accessibility (Farid et al., 2018; Hassanzadeh et al., 2012). Various studies have emphasized SQ's role in meeting user requirements and ensuring system robustness (Alla et al., 2013; Gorla et al., 2010).

Chang (2013) highlights SQ as pivotal in how systems prepare and present information based on user needs, linking it to the quality of the information system's production process. In digital education systems, there's a notable positive correlation between SQ and student satisfaction (Ali et al., 2022). This includes the usability and organizational aspects of online learning services and websites (Zheng et al., 2013).

The Information Systems Success Model deems SQ as a crucial indicator of user satisfaction and intent to use, with user satisfaction often serving as a measure of system success (DeLone & McLean, 2003; Farid et al., 2018). Factors like insightful feedback in blended learning programs and technical attributes like consistency, scalability, and security significantly influence perceptions of system efficacy (Mirabolghasemi et al., 2021; Sedera et al., 2004). Perceived SQ is closely linked to user satisfaction and usage intention, impacting user perceptions of interface quality, technological appropriateness, responsiveness, navigation, security, and privacy (Alla et al., 2013; Chang, 2013). Gorla et al. (2010) argue that a well-designed and implemented system is critical for user satisfaction and perceived value. Chopra et al. (2019) also emphasize service quality in online learning, focusing on criteria like portability, ease of use, navigation, and reliability, underscoring SQ's comprehensive role in shaping effective online educational experiences. Consequently, the following hypothesis is presented:

H2: System quality has a significant impact to students' satisfaction in blended learning.

2.4 Information Quality

Information quality (IQ) in learning management systems, conceptualized as information output standards like reports or web displays, is crucial in enhancing the learning experience (DeLone & McLean, 2003). Information quality primarily concerns how learners assess resources within these systems, emphasizing accuracy, completeness, consistency, and integrity (Huh et al., 1990). Accuracy relates to data conformity with real-world entities, completeness involves the availability of all necessary data, and consistency ensures no conflicts between datasets. The caliber of report content and structure in an information system is defined by correctness, completeness, topicality, usefulness, relevance, scope, and timeliness (Cheng, 2014). Gorla et al. (2010) identified key elements of end-user computing satisfaction regarding IQ: content, accuracy, usability, timeliness, and completeness. High-quality information is also marked by timeliness, accessibility, readability, and relevance (Mirabolghasemi et al., 2021). Users perceive IQ as the value of data on a webpage, particularly regarding its usefulness (Chang, 2013). Notably, information quality metrics indicate course design excellence and are crucial for effective online learning (Nikou & Maslov, 2023; Shehzadi et al., 2021).

DeLone and McLean (2003) established a correlation between IQ and individual impacts, assessed through accuracy, completeness, relevance, timeliness, consistency, workplace efficacy, decision-making performance, and output quality. Communication effectiveness significantly influences user satisfaction and the intention to revisit a system (Chang, 2013). High-quality content in digital education systems can elevate student satisfaction and perception of the system's effectiveness by meeting specific user requirements and ensuring content is extensive, updated, and customizable (Cheng, 2014; Lee et al., 2009). Wang et al. (2007) suggest effectiveness criteria for IQ, including accuracy, sufficiency, and timeliness, to enhance understanding and workplace application. Consequently, the following hypothesis is presented:

H3: Information quality has a significant impact to students' satisfaction in blended learning.

2.5 Perceived Usefulness

Perceived usefulness, integral to the Technology Acceptance Model (TAM), refers to an individual's belief in a system's effectiveness in enhancing career performance, implying the system's potential for favorable application (Davis, 1989). The expectation of improved workplace performance and rewards, such as promotions and bonuses, influences this perception. Users recognizing a strong use-performance connection typically perceive higher usefulness (Cheng, 2020; Davis, 1989).

In online education, perceived usefulness significantly impacts student satisfaction and continuous system use. It hinges on the belief that technology use will improve learning efficiency and outcomes (Al-Rahmi et al., 2019). This concept encompasses the subjective perception of future benefits and the alignment between user expectations and actual system experience (Chang, 2013). Confirmation of expectations, such as the effectiveness of online video demonstrations, is crucial in enhancing satisfaction and motivating technology adoption (Al Natour & Woo, 2021). Ultimately, perceived usefulness determines students' attitudes towards the program and their propensity to continue its use, particularly if they perceive tangible benefits like improved grades and time savings (Salimon et al., 2021). As a result, the following hypothesis is posited:

H4: Perceived usefulness has a significant impact to students 'satisfaction in blended learning.

2.6 Self-Efficacy

Self-efficacy (SE), the belief in one's capability to perform tasks using existing abilities, is a pivotal concept in understanding individual motivation and action (Bandura, 1994). Aldholay et al. (2018) and Maini et al. (2021) describe SE as the confidence in completing a course or program and a proactive, cost-effective strategy in daily life. Eom (2012) emphasizes the role of SE in individuals' conviction in their ability to use skills and technologies, such as computers and information systems.

Within the framework of social cognitive theory, Self-efficacy is identified as a critical aspect of self-schemata, reflecting confidence in specific actions (Azila-Gbettor et al., 2022). Hobfoll (2002) notes that SE is integral to overall well-being and functions as a cognitive resource, enhancing personal health and fostering constructive behaviors and attitudes. In educational contexts, student SE encompasses the value and confidence students place in their competencies and knowledge application, significantly influencing their academic success (D'Souza et al., 2023).

Research indicates that Self-efficacy significantly affects learners' satisfaction and engagement in online learning, with higher SE linked to greater motivation and purpose in studies (Aldholay et al., 2018; Hobfoll, 2002). Students with high self-efficacy are more likely to face academic challenges positively and engage in online learning, which correlates with better learning outcomes and satisfaction (Gashi et al., 2022). Conversely, low Self-efficacy may lead to avoidance of challenging tasks. Hence, understanding and fostering SE is crucial for student engagement and success in online education, demonstrating its extensive applicability and explanatory power across various contexts. As a result, the following hypothesis is posited:

H5: Self-efficacy has a significant impact to students' satisfaction in blended learning.

3. Research Methods and Materials

3.1 Research Framework

The researcher applied three model theories from Mirabolghasemi et al. (2021), Cheng (2020), and Aldholay et al. (2018). All three theoretical frameworks mentioned above supported and developed a conceptual framework in Figure 1.

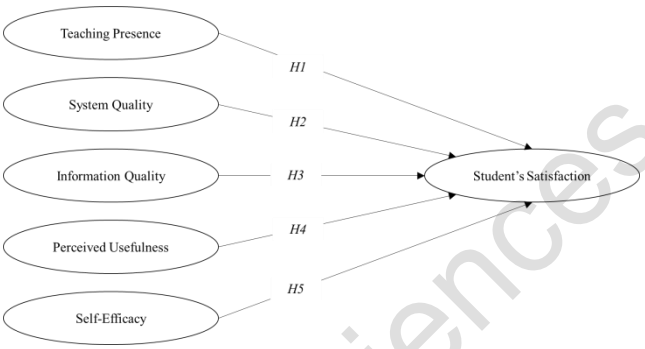

Figure 1: Conceptual Framework

H1: Teaching presence has a significant impact to students' satisfaction in blended learning.
H2: System quality has a significant impact to students' satisfaction in blended learning.
H3: Information quality has a significant impact to students' satisfaction in blended learning.
H4: Perceived usefulness has a significant impact to students' satisfaction in blended learning.
H5: Self-efficacy has a significant impact to students' satisfaction in blended learning.

3.2 Research Methodology

The research methodology encompassed four distinct phases. Initially, data collection involved surveying the entire study population (n=80) to gather information pertinent to the conceptual framework under investigation. This was followed by a rigorous evaluation of all hypotheses using multiple linear regression analysis, applying a p-value threshold of <0.05 for significance determination (Vongurai, 2022). Hypotheses that met this criterion were subsequently upheld, whereas those falling short were excluded.

The second phase entailed conducting preliminary surveys among the refined group of 80 students, focusing on those hypotheses that had garnered empirical support. The third phase marked the introduction and implementation of the proposed strategic plan, which was executed with a subset of 30 participants.

In the concluding phase, these 30 participants engaged in an expected situation plan survey. The data obtained from this survey were then subjected to a paired sample t-test to draw comparisons between the conditions before and after the implementation of the strategic plan. This systematic approach facilitated an in-depth exploration and validation of the research aims and hypotheses.

3.3 Research Population, Sample Size, and Sampling Procedures

3.3.1 Research Population

The study's participant pool consisted of students actively participating in the Finance Literacy Course at Chengdu Vocational and Technical College of Industry. The selection process for this research included students from three specific fields of study: Data and Accounting, Accounting Information Management, and Cross-border E-commerce. Following the recommendation, each variable within a regression analysis is required to have at least ten observations (Hair et al., 2014). The conceptual framework of this study incorporated six variables, leading to the determination that a minimum of 60 students was necessary for the linear regression analysis. In order to minimize the impact of variables like invalid questionnaires on the data collected from valid responses, the sample size was set at 80 students.

3.3.2 Sample size

In the study's initial diagnostic stage, we established a sample size of 40 for the reliability assessment and 80 for conducting the multivariate restricted regression analysis. Following this, during the strategic plan phase, 30 students were selected to be part of the strategic plan's execution. In the subsequent phase after the strategic plan, the same cohort of 30 students underwent reassessment to gauge the effectiveness of the strategic plan's execution.

3.3.3 Sampling Procedures

In this study, various sampling methodologies were employed across three distinct stages, adhering to both probability and non-probability techniques.

Stage 1 utilized purposive sampling, a non-probability approach, where students from three out of nine majors at the School of Finance and Business. These majors included Data and Accounting, Accounting Information Management, and Cross-border E-commerce. For the preliminary phase of the study, 40 students were selected through a random process. They were requested to complete the survey questionnaire and provide feedback, contributing to both the pilot survey and the pilot test.

In stage 2, the study adopted a probability sampling method, specifically stratified random sampling. This phase encompassed a total student population of 565 from the majors, with sample sizes allocated based on their respective proportions within this group, a total sample of 80.

Stage 3 continued with non-probability sampling methods, employing purposive and convenience sampling strategies. The researcher randomly selected and sampled 30 voluntary students to join the suggested strategic plan.

3.4 Research Instruments

3.4.1 Design of Questionnaire

The researcher developed the survey questionnaire through a structured three-step process. In the first step, relevant questionnaire sources were identified from four published articles: Tan (2021), Mirabolghasemi et al. (2021), Cheng (2020), and Aldholay et al. (2018). The second step involved adapting and tailoring the survey questionnaires to suit the context of Chinese college students. The final step encompassed the application of the Item Objective Congruence Index (IOC) for validation purposes.

3.4.2 Components of Questionnaire

The survey questionnaire was structured into two main parts:

Part 1, "General Information of the Respondents," collected key demographic data, including gender, grade, and major, specifically designed to meet the study's requirements and focus on the respondents' background and study status.

Part 2, "Factors Related to Students' Satisfaction," explored elements affecting student satisfaction in public colleges through 26 questions across five independent variables. Respondents were asked to express their agreement or disagreement with each item, enabling the assessment of each factor's impact.

This structure was chosen to effectively analyze the factors influencing student satisfaction in blended learning contexts.

3.4.3 IOC Results

The researcher enlisted the expertise of five independent professionals, comprising one associate professor, two holding Ph.D. degrees, and two who are Ph.D. candidates, to execute the Index of Item-Objective Congruence (IOC). During this IOC procedure, these experts evaluated each item, assigning scores of +1 for congruency, 0 for ambiguity, and -1 for incongruency. In this study, the scores for all questionnaire items exceeded the threshold of 0.67, leading to the decision to retain all items in the questionnaire.

3.4.4 Pilot survey and Pilot test results

The researcher conducted a pilot survey with a random sample of 40 students, requesting their participation in completing the survey questionnaire and providing feedback. Subsequently, Cronbach’s Alpha internal consistency reliability test was employed to assess the reliability of the survey, with a benchmark value set at 0.7 or higher, as per Nunnally and Bernstein (1994). The results, as shown in the table below, confirmed the high reliability of each construct in the survey.

Table 1: Pilot Test Result

Variables	No. of items	Sources	CA	Strength of Association
Teaching Presence (TP)	5	Tan (2021)	0.939	Excellent
System Quality (SQ)	5	Mirabolghasemi et al. (2021)	0.947	Excellent
Information Quality (IQ)	5	Mirabolghasemi et al. (2021)	0.949	Excellent
Perceived Usefulness (PU)	4	Cheng (2020)	0.946	Excellent
Self-Efficacy (SE)	4	Aldholay et al. (2018)	0.954	Excellent
Student Satisfaction (SS)	3	Mirabolghasemi et al. (2021)	0.931	Excellent

4. Results and Discussion

4.1 Results

4.1.1 Demographic Profile

Table 2 presents the demographic characteristics of this study's research population (n=70) and IDI participants (n=30).

Table 2: Demographic Profile

Entire Research Population (n=80)		Frequency	Percent
Gender	Male	11	13.75%
	Female	69	86.25%
Grade	Freshman year	19	23.75%
	Sophomore year	35	43.75%
	Junior year	26	32.50%
Major	Data and Accounting	35	43.75%
	Accounting Information Management	26	32.50%
	Cross-border E-commerce	19	23.75%
Total		**80**	**100%**
Suggested Strategic Plan (N=30)		**Frequency**	**Percent**
Gender	Male	8	26.67%
	Female	22	73.33%
Grade	First Year	0	0
	Second Year	30	100.00%
	Third Year	0	0
Major	Data and Accounting	30	100.00%
	Accounting Information Management	0	0
	Cross-border E-commerce	0	0
Total		**30**	**100%**

4.1.2 Results of multiple linear regression

In this study, the investigators employed multiple linear regression to analyze the relationship between continuous independent and dependent variables. All 80 survey questionnaire responses were analyzed to ascertain the support for each hypothesis. Using Jamovi software, this refined analysis revealed that all independent variables significantly influence student satisfaction, with P-values below the 0.05 threshold. The analysis revealed the following P-values for the variables: Teaching Presence registered a value of less than 0.001, System Quality at 0.006, Information Quality at 0.049, Perceived Usefulness at 0.003, and Self-Efficacy at 0.007. The R squared (R^2) statistic was 0.349, indicating that these variables explain 34.9% of the variance in student satisfaction. Additionally, the Variance Inflation Factor (VIF) values for all variables were well below the threshold of 5 (Hair et al., 1995), ensuring the reliability of the regression estimates. The VIF values ranged from 1.03 for Information Quality to 1.12 for System Quality.

Table 3: The multiple linear regression of five independent variables on students' satisfaction.

Variables	Standardized Coefficients Beta	t-value	P-value	VIF	R^2
Teaching Presence	0.312	3.64	< .001**	1.08	0.349
System Quality	0.26	2.8	0.006*	1.12	
Information Quality	0.201	2.01	0.049*	1.03	
Perceived Usefulness	0.336	3.05	0.003*	1.05	
Self-Efficacy	0.259	2.77	0.007*	1.04	
Dependent variable: Students' Satisfaction					

Note: p-value <0.05*, p-value <0.001**

Overall, the comprehensive statistical analysis strongly supports the hypothesis that the five identified independent variables significantly and positively impact student satisfaction. This evidence reinforces the theoretical understanding that elements such as teaching presence, system quality, information quality, perceived usefulness, and self-efficacy play crucial roles in determining students' educational satisfaction.

Consequently, the hypotheses were formulated in stages, guided by the results of the multiple linear regression analysis. Following this, the suggested strategic plan was executed in accordance with these established hypotheses:

H6: There is a significant mean difference in teaching presence between the current situation and the expected situation.

H7: There is a significant mean difference in system quality between the current situation and the expected situation.

H8: There is a significant mean difference in information quality between the current situation and the expected situation.

H9: There is a significant mean difference in perceived usefulness between the current situation and the expected situation.

H10: There is a significant mean difference in self-efficacy between the current situation and the expected situation.

H11: There is a significant mean difference in students' satisfaction between the current situation and the expected situation.

4.2 Strategic Plan Stage

The suggested strategic plan, spanning 14 weeks, was founded on qualitative data gathered during the current situation stage, aiming to enhance student satisfaction – the primary objective of this research. The researcher methodically detailed the strategic plan in a chronological sequence, as depicted in Figure 2.

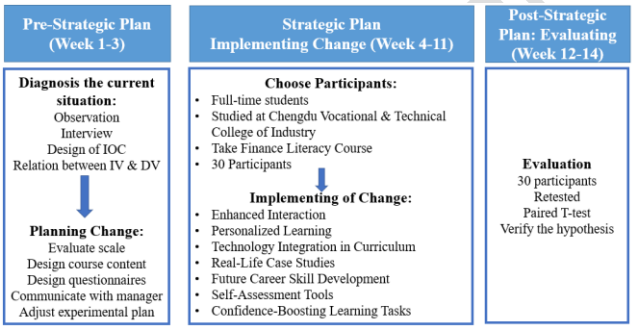

Figure 2: IDI Activities

4.3 Results Comparison between Pre-IDI and Post-IDI

The researcher conducted a paired-sample t-test analysis on all six variables to determine if there were notable differences in Students' Satisfaction between the current situation and the expected situation. The results of this analysis for each of the six variables are comprehensively presented in Table 4.

Table 4: Paired-Sample T-Test Results

Variables	Mean	SD	SE	P-value
Teaching Presence				
Current Situation	3.47	1.07	0.085	< .001
Expected Situation	4.21	0.872	0.361	
System Quality				
Current Situation	2.48	0.999	0.092	0.006
Expected Situation	4.04	0.979	0.199	
Information Quality				
Current Situation	3.57	0.886	0.100	0.049
Expected Situation	4.26	0.979	0.222	
Perceived Usefulness				
Current Situation	3.95	0.815	0.110	0.003
Expected Situation	4.49	0.852	0.222	
Self-Efficacy				
Current Situation	3.39	0.953	0.009	0.007
Expected Situation	4.13	1.02	0.200	
Students' Satisfaction				
Current Situation	3.75	0.933	-	< .001
Expected Situation	4.28	0.879	-	

Table 4 presents the outcomes of the paired-sample t-test analysis, comparing the current situation and the expected situation as follows:

The strategic plan's enactment within the educational framework has demonstrably led to substantial improvements across a range of pedagogical and infrastructural dimensions, as evidenced by robust statistical validation. Particularly, Teaching Presence, which corresponds to Hypothesis 6 (H6), underwent a significant elevation in mean score by 21.33%, escalating from 3.47 (SD = 1.07, SE = 0.0855) to 4.21 (SD = 0.872, SE = 0.361), thus providing strong support for H6. This increment not only reflects the intensification of teaching engagement but also suggests a consolidation of educational interactions' expected situation implementation.

The variable of System Quality, aligned with Hypothesis 7 (H7), recorded the most substantial enhancement with a 62.90% increase in the mean score, from 2.48 (SD = 0.999, SE = 0.0927) to 4.04 (SD = 0.979, SE = 0.199). This leap indicates a profound impact of the strategic plan on the educational system's overall quality, affirming H7 with notable empirical evidence.

Advancements in Information Quality and Perceived Usefulness, hypothesized in H8 and H9, were also significant. Information Quality's mean score rose by

19.33%, from 3.57 (SD = 0.886, SE = 0.1004) to 4.26 (SD = 0.979, SE = 0.222), and Perceived Usefulness experienced a 13.67% enhancement in the mean score, from 3.95 (SD = 0.815, SE = 0.1101) to 4.49 (SD = 0.852, SE = 0.222). These increments substantiate H8 and H9, respectively, showcasing the strategic plan's effectiveness in improving the quality and perceived value of information delivered within the educational context.

Moreover, Self-Efficacy, encapsulated by Hypothesis 10 (H10), improved by 21.83%, with its mean rising from 3.39 (SD = 0.953, SE = 0.00936) to 4.13 (SD = 1.02, SE = 0.2), thereby endorsing H10. This suggests that the strategic plan significantly empowered individuals' confidence in their educational capabilities.

Student satisfaction, addressed by Hypothesis 11 (H11), also observed a noteworthy increase of 14.13% in the mean score, from 3.75 (SD = 0.933) to 4.28 (SD = 0.879), thereby emphatically supporting H11 and highlighting the plan's success in elevating students' educational Satisfaction.

Collectively, these results not only corroborate the hypothesized improvements linked with H6 through H11 but also delineate the strategic plan's comprehensive and beneficial impact on the educational environment. This impact is characterized not just by statistical significance but also by its substantive relevance to the pedagogical field, affirming the strategic plan's critical role in enhancing instructional quality, system robustness, information reliability, perceived utility, individual self-efficacy, and student satisfaction.

5. Conclusions, Recommendations and Limitations

5.1 Conclusions & Discussions

This research explored the impact of five independent variables, teaching presence, system quality, information quality, perceived usefulness, and self-efficacy, on one dependent variable, students' satisfaction. A thorough research design, data collection methods, and analytical techniques were employed to derive insightful findings.

The methodological framework included utilizing the Index of Item-Objective Congruence (IOC) to validate the research tools and implementing Cronbach's Alpha in the pilot phase to confirm their reliability. This meticulous approach to instrument validation enhanced the study's overall validity. Data collection involved acquiring 80 valid responses from students at Chengdu Vocational and Technical College of Industry, which were analyzed through multiple linear regression to ascertain the relationships between the independent and dependent variables. Furthermore, a strategic plan spanning 14 weeks was executed with a select group of 30 students. Data from the expected situation phase were gathered and contrasted with current situation data via a paired-sample t-test analysis.

The empirical evidence from this study underscores the pivotal role of five core elements in shaping student satisfaction: enhanced teaching presence, augmented system quality, enriched information quality, heightened perceived usefulness, and bolstered self-efficacy. These findings suggest a paradigm shift in educational strategy, emphasizing the need to refine instructional techniques, improve the overall quality and user-friendliness of educational systems, ensure the delivery of information that is both high in quality and relevant to the learners' needs, elevate the perceived applicability and benefits of the educational content, and strengthen the self-efficacy of students. Such a strategic focus is integral to amplifying students' satisfaction and engagement, thereby fostering an educational milieu that is both nurturing and conducive to optimized learning outcomes.

In conclusion, this research, through its rigorous analytical methods, establishes the profound impact of five key factors that enhanced teaching presence, augmented system quality, enriched information quality, heightened perceived usefulness, and bolstered self-efficacy on student satisfaction, thereby providing a strategic blueprint for educational advancements. By underscoring these elements, the study not only guides the creation of more effective, satisfying, and learner-centered educational environments but also acts as a catalyst for future educational reforms and pedagogical innovations. These innovations are geared toward maximizing student engagement and learning outcomes across diverse educational settings. Elevating student satisfaction transcends mere academic goals; it is crucial for cultivating an engaged, informed, and competent student body. Such enhancement in student satisfaction benefits public colleges by promoting a dynamic learning atmosphere, boosting their reputation, and potentially leading to superior academic results. Therefore, this study is instrumental in shaping student-centric educational strategies, ultimately contributing to the enrichment of the broader educational ecosystem in China.

5.2 Recommendations

In the evolving paradigm of modern education, the integration of blended learning methodologies has become pivotal in augmenting educational quality and student satisfaction. This research delineates a compendium of empirically-informed recommendations aimed at refining blended learning environments to bolster student engagement and overall satisfaction metrics.

Foremost, academic institutions, with a specific focus on public colleges, are urged to prioritize strategic investments

in technological infrastructure and support systems. The deployment of sophisticated online learning platforms, including interactive video modules and collaborative discussion forums, is posited to enrich the student learning experience. This enhancement is anticipated to catalyze student engagement and invigorate their intrinsic motivation toward academic pursuits.

For students, proactive engagement in both facets of blended learning - digital and traditional - is advocated. Establishing and nurturing learning communities, transcending the boundaries of online and offline realms, is suggested to amplify the social dynamics of the educational experience. Concurrently, the development of efficacious time management proficiencies is emphasized to maintain a harmonious equilibrium between online self-directed learning and conventional classroom interactions.

The pedagogical approach for educators necessitates a paradigm shift towards flexible and diverse instructional methodologies. Professional development programs are recommended to equip educators with the requisite skills for effective engagement and feedback mechanisms within a blended learning framework. Techniques such as real-time interactive sessions and collaborative group discussions are posited to significantly enhance student participatory experiences and satisfaction levels.

Specifically addressing financial literacy courses, an integration of theoretical constructs with practical applications, centering on pivotal areas like tax law and financial statement analysis, is recommended. Methodologies involving case study analyses and real-world financial statement evaluations are proposed to bridge the gap between academic learning and practical applicability. Regular curricular updates, incorporating contemporary financial regulations and industry trends, are deemed essential to maintain the relevance and rigor of the course content.

In a broader educational context, fostering interdisciplinary collaborations and integrating diverse knowledge spectra into blended learning curricula is advocated. Regular assessments of the blended learning environment's efficacy, predicated on student feedback, are recommended to ensure continuous improvement and alignment with educational objectives.

In summation, the implementation of these recommendations is projected to cultivate a holistic and supportive educational milieu, thereby augmenting the efficacy of blended learning models and elevating student satisfaction indices. It is imperative for academic institutions to embrace these strategies, thereby equipping students with the competency requisite for academic success and personal advancement in an increasingly competitive global landscape.

5.3 Limitations for Future Research

In advancing the pedagogical efficacy of blended learning methodologies, it is imperative to acknowledge the limitations of existing research paradigms. These limitations highlight the areas necessitating further inquiry and pave the way for a more comprehensive and nuanced understanding of blended learning dynamics. The following limitations, identified in the initial study, serve as a foundation for future research directions:

Expanded Sample Size and Diversity: The initial investigation, confined to a specific demographic at Chengdu Vocational and Technical College of Industry, underscores the need for a broader research scope. Future studies should encompass a more heterogeneous sample, incorporating students from diverse educational institutions, age groups, and cultural milieus. Such an expansion is crucial for assessing the universality and adaptability of blended learning strategies across varied student populations.

Inclusion of Additional Variables: The primary study's focus on select variables necessitates an extension in future research. It is essential to explore a wider range of independent variables that potentially influence student engagement and satisfaction in blended learning contexts. Variables such as individual learning styles, socio-economic backgrounds, and prior technological exposure warrant investigation to enrich our understanding of blended learning's multifaceted nature.

Exploration of Variable Interactions: Future research should investigate the intricate interactions among various independent variables. A comprehensive analysis of how these variables interrelate will offer a more layered perspective on their collective influence on student engagement and satisfaction within blended learning frameworks.

Contextual Specificity: The study's findings, predominantly from public college settings, highlight a gap in contextual applicability. Future research should extend its purview to include diverse educational settings, such as private institutions, middle school, or K-12 education, to evaluate the efficacy of blended learning strategies in these varied contexts.

Longitudinal Studies: Future research should incorporate longitudinal studies to gain a deeper insight into the enduring effects of blended learning strategies. These studies are pivotal in understanding how these effects evolve over time and their sustained impact on academic performance and personal development.

Faculty Training and Adaptation Challenges: The challenges educators face in adapting to blended learning methodologies represent a significant area for future research. Investigations into effective training programs and

strategies to mitigate faculty resistance are essential for implementing and sustaining blended learning approaches.

These limitations serve as a roadmap for future scholarly endeavors and underscore the necessity for a multifaceted and evolving approach to research in blended learning. Addressing these areas will significantly contribute to refining and enhancing blended learning methodologies, ultimately fostering a more effective and inclusive educational environment.

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